

PREPARING FOR  
DROUGHT  
IN THE  
21<sup>ST</sup> CENTURY

---

EXECUTIVE SUMMARY

---

## Members of the National Drought Policy Commission



**Dan Glickman, Chair**  
Secretary  
U.S. Department of Agriculture



**The Honorable Roy Barnes**  
Governor of Georgia



**Robert C. "Bob" Brown**  
Executive Vice President  
Farm Credit Bank of Texas



**The Honorable Sam Kathryn Campana**  
Mayor of Scottsdale, Arizona



**Ane D. Deister**  
Executive Assistant to the General Manager  
Metropolitan Water District of  
Southern California



**John J. Kelly, Jr.**  
Assistant Administrator for Weather Services  
U.S. Department of Commerce



**Bernard Kulik**  
Associate Administrator for Disaster Assistance  
Small Business Administration



**Eluid L. Martinez**  
Commissioner, Bureau of Reclamation  
U.S. Department of the Interior



**The Honorable Ronald R. Morriss, Vice Chair**  
Supervisor  
Santa Cruz County, Arizona




**Robert L. Miller**  
Rancher and Past President of the  
Intertribal Agriculture Council



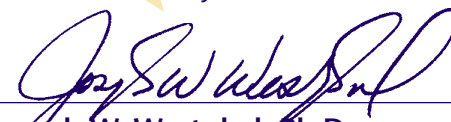
**Ernesto Rodriguez**  
State Director for Emergency Management,  
New Mexico Department of Public Safety



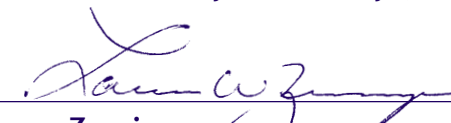
**Brian Schweitzer**  
Montana farmer/rancher/soil scientist



**A. Leon Smothers**  
Manager of Water Resources  
State of Kentucky



**Joseph W. Westphal, Ph.D.**  
Assistant Secretary of the Army (Civil Works)



**Larry Zensinger**  
Director, Human Services Division  
Federal Emergency Management Agency



“And it never failed that during the dry years  
the people forgot about the rich years, and during the wet years  
they lost all memory of the dry years. It was always that way.”

—John Steinbeck  
*East of Eden*

## The Challenge

Drought occurs somewhere every year in the United States. It can and does extend over long periods and large areas, and it brings hardship.

After a major drought, it is common to study the causes and impacts. The resulting large body of literature on this subject has many similar themes. Two of them are especially relevant to the work of the National Drought Policy Commission:

- ☀ As a citizenry, we must remember the lessons learned from past droughts and act on them to prepare for the next drought.
- ☀ The federal government must decide how to coordinate its more than 80 drought-related programs and how to integrate them with ongoing nonfederal drought programs and the efforts of individuals.

Unless and until these basic steps are taken, this country will likely continue to rely on taxpayer-funded emergency relief after drought and then forget to prepare for the next drought.

In 1998, Congress passed the National Drought Policy Act, which created the National Drought Policy Commission and challenged us to recommend a better way.

## The Response

We met the Act’s challenge. First, we developed a national drought policy statement with preparedness as its foundation. We ask Congress and the President to endorse this policy through a National Drought Preparedness Act. Second, we outlined a course of action that includes a preparedness initiative to help reduce the damages and costs of drought. Third, we envision a nonfederal/federal partnership to ensure that federal drought programs are better coordinated, that they are better integrated with nonfederal programs, and that their services are more efficient and effective and driven by customer needs.

It will take commitment and resolve to achieve the goals of national drought policy. We therefore call on the President and Congress to provide sufficient resources to carry out the recommendations in this report. Allocation of funds should be based on consideration of the costs and benefits associated with drought preparedness, proactive mitigation, and response measures.

---

*Studies show that the federal government spent \$3.3 billion responding to the 1953-1956 drought, at least \$6.5 billion during the 1976-1977 drought, and about \$6 billion during the 1988-1989 drought. The Commission contends that we can reduce this nation’s vulnerability to the impacts of drought by making preparedness the cornerstone of national drought policy.*

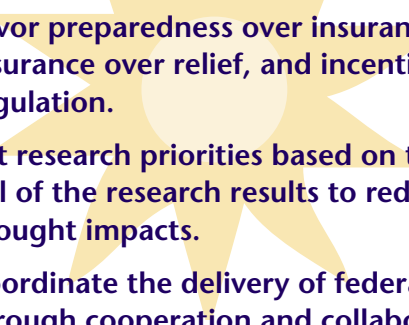
---

---

## Policy Statement

The Commission developed the following statement as the basis of national drought policy.

**National drought policy should use the resources of the federal government to support but not supplant nor interfere with state, regional, local, tribal, and personal efforts to reduce drought impacts. The guiding principles of national drought policy should be:**

- 
1. **Favor preparedness over insurance, insurance over relief, and incentives over regulation.**
  2. **Set research priorities based on the potential of the research results to reduce drought impacts.**
  3. **Coordinate the delivery of federal services through cooperation and collaboration with nonfederal entities.**

This policy requires a shift from the current emphasis on drought relief. It means we must adopt a forward-looking stance to reduce this nation's vulnerability to the impacts of drought. Preparedness—including drought planning, plan implementation, proactive mitigation, risk management, resource stewardship, consideration of environmental concerns, and public education—must become the cornerstone of national drought policy.

Our recommendations are based on our findings about the gaps among what is needed and what is provided by state, regional, local, tribal, and federal drought programs and laws. The findings stem from information presented by witnesses at our public hearings across the country and in written comments submitted independently, as well as from our own experience. Page 12 contains a list of appendices that summarize this information.

In keeping with the law that established the Commission, our recommendations relate primarily to the federal government's role in national drought policy. We view the federal

government as one of many partners needed to reduce the impacts of drought. Throughout our deliberations, we heard often and forcefully from nonfederal governments, citizen groups, and individuals that much of the work appropriately lies outside the federal government. As our recommendations attest, federal resources should be used to augment the vital drought-related programs of nonfederal entities.

## Summary of Findings

**Preparedness Is Key.** The importance of preparedness was a central finding of the Senate Task Force on Funding Disaster Relief in 1995, among other studies. This basic concept was universally supported within this Commission and by the overwhelming majority of people who commented on the draft version of our report. It has been documented for years in drought studies, which point out that preparedness—including drought planning, plan implementation, proactive mitigation measures, and public education—may well reduce the social, economic, and environmental impacts of drought and the need for federal emergency relief expenditures in drought-stricken areas. Many studies also emphasize that preparedness may lessen conflicts over competition for water during drought.

Across the country, we learned that individuals, citizen organizations, local and state governments, tribes, and regional bodies are actively engaged in drought preparedness. In many cases, these activities take place within the broader framework of comprehensive water management planning. Such planning is usually conducted by entities that range from water districts and large multi-county urban areas to state water resources agencies and regional river basin compacts and commissions.

In response to individual challenges over the years, Congress has created federal programs to lessen the impacts of drought. Our assessment indicates that more than 80 federal programs—





*The definition of what drought is and what drought is not has profound implications for the environment and all segments of society, yet it may be different for each. Many attempts have been made to develop a comprehensive and meaningful definition. A generic definition provides a starting point: Drought is a persistent and abnormal moisture deficiency having adverse impacts on vegetation, animals, or people.*

spread across various departments and agencies—are directly or indirectly related to drought.

Witnesses at our hearings and written comments submitted independently often criticized this *ad hoc* federal approach to drought. We heard that the federal government should provide a central point of contact where people can find out about programs to assist them in planning and mitigation. We heard too that a pooling of nonfederal and federal experience and the establishment of nonfederal/federal partnerships will go far to develop the tools needed to formulate drought preparedness strategies, including incorporation of environmental concerns. We were strongly advised that incentives, rather than regulations, and models that can be adapted to local conditions, rather than “one-size-fits-all” prescriptions, will result in more positive outcomes.

### **Information and Research Support**

**Preparedness.** This country has developed the capability to produce a wealth of basic weather, water, soil moisture, snow amount, and climate observations. Many people told us that without such information, they do not have the basis to prepare for drought.

Across the nation, federal monitoring and prediction programs join Regional Climate Centers,

state climatologists, universities, and private institutions to develop the information needed for effective drought preparedness. These programs provide data to private weather services and other enterprises, which may opt to devise detailed predictions tailored to individual needs. Some private services, for example, are using remote-sensing technology to show farmers areas of crop stress so that the farmers can make more efficient irrigation decisions.

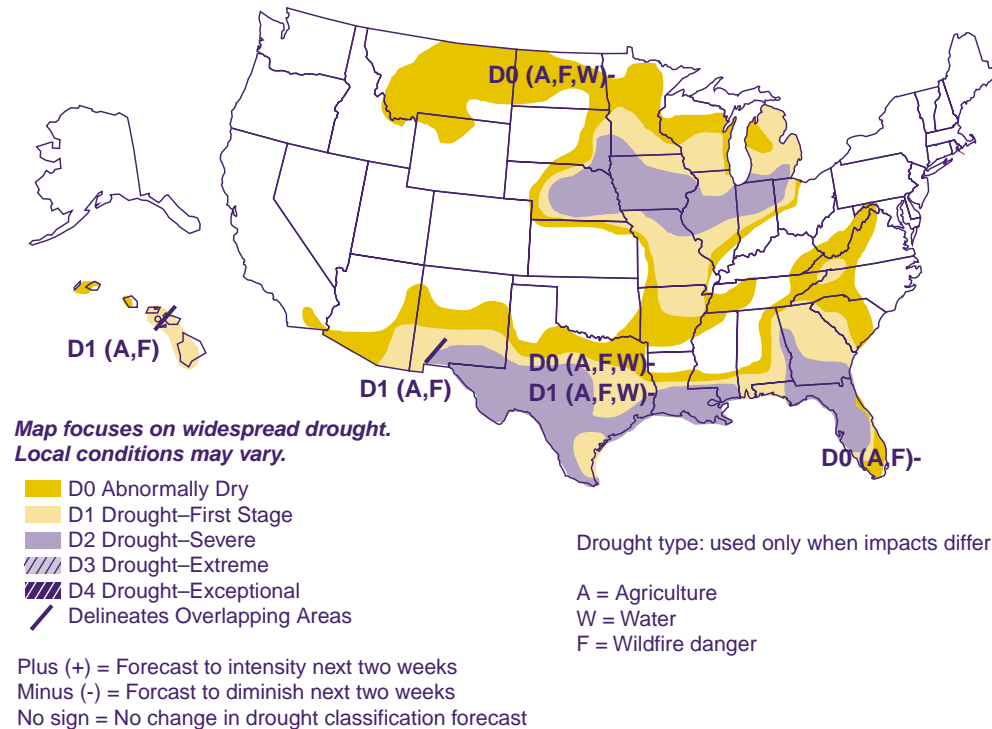
We learned, however, that drought information and data are not available for many rural areas across the country, are often complex, and, for the most part, are not presented in a standardized format. Such data can also be difficult to find and interpret. This is especially true for individuals, small businesses, and some communities and tribes that do not have ongoing relationships with drought management entities. Many people stated there is a need for such information nationwide and for an accessible “gateway” (point of contact) where standardized, comprehensible current information and historical data are available.



*The Commission was informed of various proactive drought mitigation activities developed at the local level. In Los Angeles, “Second Nature: Adapting LA’s Landscape for Sustainable Living” is a program run by the nonprofit TreePeople organization. The program involves young people in urban landscape retrofits such as planting trees and also works with citizens and businesses to install technology for capturing storm water and adjusting runoff patterns for residences and commercial buildings. Andy Lipkis, Executive Director of TreePeople, is pictured here with young friends.*

April 11, 2000 Valid 7a.m. EST

## U.S. Drought Monitor



The U.S. Department of Commerce, U.S. Department of Agriculture, and National Drought Mitigation Center publish a weekly, Drought Monitor on the Internet, posted at <http://enso.unl.edu/monitor/monitor.html>. The Monitor serves as an excellent example of a collaborative effort to pull together the various sources of weather data and compile them in a single, comprehensive, national report. In addition to the map, the Monitor includes a summary of recent significant weather as well as forecasts of conditions that could affect drought intensities in upcoming weeks.

This country also reaps the benefits of high-quality research geared to ensure continued advances in the knowledge and technology that are fundamental to drought preparedness. But we heard that the results of research are not always disseminated in a timely fashion or through easily accessible modes. Research results as well as technology transfers, we were told, are needed for effective drought preparedness and therefore must be made readily and widely available.

**Insuring Against Drought.** It is evident from the information we received and assessments we conducted that even the best preparedness measures will not adequately address some drought-related risks. Small businesses such as marinas and other water-based recreation enterprises, for example, are as vulnerable to the impacts of drought as are farmers and ranchers.

Main Street enterprises that rely heavily on income from agriculture or water-based recreation businesses suffer when those businesses lose income.

Insurance is one approach that individuals can choose to take on their own. But for drought, the options are limited. The Small Business Administration noted that business interruption insurance is available in private insurance markets. However, it is generally not tailored to the needs of small businesses in drought situations. Small businesses may also lack access to information about the financial and business management strategies that are available to them.

Crop insurance has been a central feature of U.S. agricultural policy for decades. And while farmers and ranchers are among the first to feel the impacts of drought, the current federal crop





Research that has identified germplasm and dominant genes in naturally occurring drought-tolerant plants can help reduce drought impacts to non-irrigated crop and forage production that is totally dependent on rainfall. Research identifies the characteristics of impacts resulting from changes in weather patterns such as El Niño, La Niña, and the North Atlantic Oscillation. Research provides the basis for technology needed in long-range weather predicting. And research provides the impetus for numerous technological improvements in irrigation efficiency, desalination, wastewater treatment, and household items such as ultra-low flow toilets and horizontal-axis clothes washers, among other technologies.

insurance program covers only major field crops in all locations. It does not include all vegetable and lesser field crops in all locations, nor does it cover livestock. We heard from farmers, livestock producers, and vegetable growers across the country that a more comprehensive insurance program is needed. Our full report summarizes various strategies that were suggested.

**Providing a Safety Net.** We were cautioned that it will take time for farmers, ranchers, local businesses, communities, states, and tribes to make the transition from relief-oriented drought

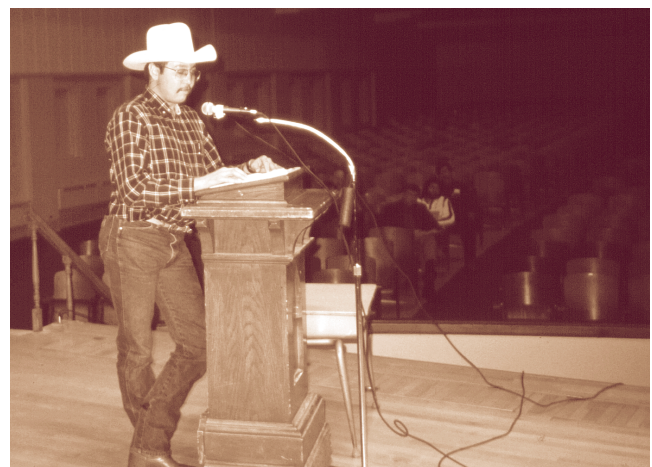
programs to drought preparedness. A safety net is needed, we were told, to help overcome the impacts of extreme occurrences of drought or the impacts of multi-faceted disasters (for example, droughts followed immediately by flooding).

Our assessment indicates there are approximately 47 federal programs with elements of drought-related relief, primarily for agricultural droughts. One such authority is Title I of Public Law 102-250. This authority allows the Bureau of Reclamation to provide emergency response assistance, including emergency well drilling. However, Title I is temporary, and the assistance it authorizes is available only within the 17 so-called “Reclamation” states in the West.

At our hearings in Austin and El Paso, Texas, Atlanta, Georgia, Billings, Montana, and Washington, D.C., witnesses expressed many concerns about the relief programs of the U.S. Department of Agriculture. The application process for drought assistance is too cumbersome; it takes too long to make decisions, and placing federal decision-making outside the local level often results in disconnection among the applicants and the programs. We believe that



*Shirley Gammon, Montana State Conservationist for the U.S. Department of Agriculture, and Mike Tatsey of the Blackfeet Tribe, shown at the Commission's hearing in Billings, Montana. Ms. Gammon described her Department's Snowpack Telemetry (SNOTEL) network in Montana, which*



*consists of 123 automated sites. The Commission heard from tribal representatives and additional witnesses that SNOTEL and other systems such as the U.S. Geological Survey's streamgaging network need to be expanded to cover tribal lands and remote rural areas.*

part of this problem can be attributed to the fact that the Department must wait for congressional emergency appropriations before assistance can be provided. Then the appropriation must be prorated among applicants. We heard that such assistance is often “too little, too late.”

We note that the Stafford Act and its implementation by the Federal Emergency Management Agency is an effective, proven model for organizing and providing emergency assistance during most catastrophic natural disasters. One reason for this success is that the Agency can draw on an annual appropriated fund to pay for disaster assistance. The Stafford Act authorizes only measures to protect health and safety, however, and has rarely been used to respond to drought-caused emergencies.

### **Need to Coordinate Drought-related**

**Programs.** The need for coordination among federal drought-related programs was a strong and recurring theme in much of the testimony at our hearings and in written comments submitted independently to the Commission. Every analysis of past responses to major droughts notes that these programs need to be better coordinated and integrated. The report prepared for the Commission by the Western Drought Coordination Council strongly suggested establishing a federal drought coordinating body. Service delivery networks do exist for many federal drought-related programs. However, we heard that they are not well integrated, and the people who need information about the programs are not always well served. There is no central point of contact concerning all federal programs and even within the same federal department, we were told, there may be many drought-related

programs but no one contact to help people access programs, information, and products.

## **Recommendations**

Our findings led us to conclude first that the United States should embrace a national drought policy with preparedness at its core. Federal resources should be dedicated to assisting nonfederal interests and the public at-large to prepare for drought. We therefore recommend that Congress pass a National Drought Preparedness Act, which would establish a nonfederal/federal partnership through a National Drought Council as described in Recommendation 5.1. The primary function of the Council would be to ensure that the goals of national drought policy are achieved. The five goals and accompanying recommendations are summarized below.

None of our recommendations should be construed as diminishing the rights of states to control water through state law, as specifically directed by the National Drought Policy Act, nor



*Candler County (Georgia) Commissioner George Bird described the Georgia Water Management Campaign at the Commission's hearing in Atlanta.*

The Georgia Water Management Campaign's mission is to enhance the abilities of local governments to manage and protect water resources by translating water management policies into local government decision-making

capabilities, guidance, and technical assistance. To achieve this mission, the Campaign developed outreach tools such as public service announcements, videos, and case studies and convened summits on water issues for local officials.

The Campaign's 21 members of the Local Government Advisory Board serve as ambassadors and provide overall guidance. The Campaign was created through a partnership among state and county entities.





as interfering in any way with state, local, and tribal sovereignty. All of our recommendations should be considered in light of the need to protect the environment, which was also required by the Act.

---

## GOAL 1

---

### **Incorporate planning, implementation of plans and proactive mitigation measures, risk management, resource stewardship, environmental considerations, and public education as the key elements of effective national drought policy.**

In accordance with the law that established the National Drought Policy Commission, we strongly endorse preparedness as a key element to reduce the impacts of drought on individuals, communities, and the environment. We believe that sound drought preparedness programs will lessen the need for future emergency financial and other assistance.

## **Specific Recommendations**

- 1.1 Congress should adequately fund existing drought preparedness programs such as the U.S. Department of Agriculture's Conservation Technical Assistance Program (Public Law 46) and Environmental Quality Incentive Program (16 U.S.C. 3839) and the Bureau of Reclamation's drought planning program (Public Law 102-250, Title II).
- 1.2 The President should direct the Bureau of Reclamation and the Army Corps of Engineers to find an effective way to meet the drought planning needs of those areas not traditionally served by the Bureau of Reclamation. Congress should fund these agencies' efforts to better serve the needs of the eastern part of the country.
- 1.3 The President should direct all appropriate federal agencies to cooperate fully and to provide all assistance possible to encourage development or revision and implementa-

tion of comprehensive drought preparedness plans by states, localities, tribes, regional entities such as watershed and river basin organizations, and the private sector.

- 1.4 Federal agencies providing drought planning assistance should encourage state, local, regional and tribal planners to use or adapt existing planning materials and resources. These include materials developed by the National Drought Mitigation Center, the Army Corps of Engineers, the U.S. Department of Agriculture, the Western Drought Coordination Council, the states, and urban and rural water districts.
- 1.5 The President should direct all appropriate federal agencies to develop and implement drought management plans for federal facilities such as military bases, federal prisons, and large federal office complexes in the United States. These plans should be coordinated with local and state drought planning and mitigation measures.
- 1.6 The President should direct all appropriate federal agencies to study their programs for potential impacts on drought. Where such potential exists, the agencies need to integrate national drought policy into their programs.
- 1.7 The President should direct federal agencies with water resources management programs to develop and promote comprehensive public awareness efforts as part of an ongoing drought preparedness strategy.

---

## GOAL 2

---

### **Improve collaboration among scientists and managers to enhance the effectiveness of observation networks, monitoring, prediction, information delivery, and applied research and to foster public understanding of and preparedness for drought.**

---

Our findings and conclusions point out the value of observation networks, monitoring, prediction, information gateways and delivery, and research to drought preparedness.

## Specific Recommendations

**2.1** The President should appropriately direct and Congress, as necessary, should authorize and fund a viable plan to maintain, modernize, expand, and coordinate a system of observation networks that meets the needs of the public at large. Priority should be placed on filling the gaps on tribal lands and in rural America. Examples of critical observation networks include:

- ☀ Department of Commerce, National Weather Service, Cooperative Observer (COOP) Program Hydrometeorological Network
- ☀ U.S. Department of Agriculture, Soil Climate Analysis (SCAN) and Snowpack Telemetry (SNOTEL) networks
- ☀ U.S. Forest Service, Remote Automated Weather Station (RAWS) Network
- ☀ U.S. Geological Survey, Streamgaging and Groundwater Network
- ☀ Other regional observation networks

---

*As the Western Drought Coordination Council advised the Commission, basic weather, water, soil moisture, mountain snow amount, and climate observations are the foundation of the monitoring and assessment activity that alerts the nation to impending drought.*

---

- 2.2** The President should appropriately direct and Congress, as necessary, should authorize and fund continuation of the U.S. Drought Monitor and exploration of opportunities for its improvement and expansion.
- 2.3** The President should appropriately direct and Congress, as necessary, should authorize and fund continuation of Drought Predictions/Outlooks and development of techniques to improve their accuracy and frequency.
- 2.4** The President should appropriately direct and Congress, as necessary, should authorize and fund a comprehensive information gateway (possibly through expansion of the National Drought Mitigation Center's website or other similar approaches) to provide users with free and open access to observation network data and drought monitoring, prediction, impact, assessment, preparedness, and mitigation measures.
- 2.5** The President should direct the appropriate federal agencies to develop an effective drought information delivery system such as the Unified Climate Access Network (UCAN) to communicate drought conditions and impacts to decision makers at the federal, regional, state, tribal, and local levels and to the private sector and general public.
- 2.6** The President should direct appropriate federal agencies to expand technology transfer of water conservation strategies and innovative water supply techniques as part of drought preparedness programs.
- 2.7** The President should direct and Congress should continue to adequately fund existing and future drought-related research. Existing competitive research grant programs should give high priority to drought.
- 2.8** The President should direct and Congress should fund completion of the soil survey on all lands, with special and immediate emphasis on tribal lands.



---

### GOAL 3

---

#### **Develop and incorporate comprehensive insurance and financial strategies into drought preparedness plans.**

We firmly believe that preparedness measures will go far to reduce this country's vulnerability to drought. But we also recognize that prolonged drought causes risks that the best preparedness measures may not adequately address. The most significant approach to such risks in recent years is the federal government's crop insurance program for farmers. We had neither the expertise nor the resources to investigate thoroughly the various options to improve the crop insurance program or the other proposals that were presented during our deliberations and that Congress has grappled with for many years. (Our full report briefly describes several alternative plans.) Still, we are convinced that sound insurance and financial strategies are essential if the country is to move away from emergency relief in response to widespread drought.



*Karen Neeley, General Counsel for the Independent Bankers Association of Texas, suggested changes in the federal crop insurance program at the Commission's hearing in Austin, Texas.*

### **Specific Recommendations**

- 3.1 We recommend that Congress authorize and fund the U.S. Department of Agriculture to evaluate different approaches to crop insurance, including a cost of production plan. The evaluation should assess whether the approaches are practicable and prudent for all farmers, ranchers, and other stakeholders in all regions of the country and whether they set standards that encourage efficient water use.
- 3.2 We recommend that the U.S. Department of Agriculture, in cooperation with state and local governments and the private sector, expand training to rural communities, farmers, and ranchers across the country on various financial strategies.
- 3.3 We recommend that the Small Business Administration, through its private-sector partners, provide information and training to small business owners on developing financial and business management strategies.

---

### GOAL 4

---

#### **Maintain a safety net of emergency relief that emphasizes sound stewardship of natural resources and self-help.**

The Commission recognizes that over time, efforts at drought preparedness, including risk management, can greatly reduce, but not eliminate, drought-related emergencies. Response measures for drought emergencies can also be useful to respond to water shortages not caused by drought. In all cases where emergency response is required, it should be effective and timely.

### **Specific Recommendations**

- 4.1 Congress should authorize the Secretary of Agriculture to borrow from the Commodity Credit Corporation to implement the Department of Agriculture's emergency programs.

- 
- 4.2 Congress should amend the appropriate U.S. Department of Agriculture's emergency programs to include livestock needs during drought.
  - 4.3 The U.S. Department of Agriculture should establish a single procedure to trigger, in a timely fashion, all of the Department's disaster programs.
  - 4.4 We recommend that emergency assistance acknowledge, encourage, and reward natural resource stewardship and self-help without discriminating against those truly in need.
  - 4.5 We recommend that Congress enact permanent authorization for Title 1 of Public Law 102-250, which gives the Bureau of Reclamation authority to provide emergency drought assistance. Because the Bureau's authority is limited to the Reclamation states, Congress should extend that authority or provide appropriate authority to the Army Corps of Engineers to serve the non-Reclamation states.
  - 4.6 For those areas not covered by the Stafford Act, Congress should appropriate an annual fund, available until expended and similar to that available under the Stafford Act, for non-farm drought emergencies that affect tribes, communities, businesses, and the environment.



*During a drought, the incidence of soil erosion may increase.*

---

## GOAL 5

---

### **Coordinate drought programs and response effectively, efficiently, and in a customer-oriented manner.**

Federal drought programs are a collection of initiatives run by different departments and agencies. Every analysis of past responses to major droughts notes that these programs need to be better coordinated and integrated.

We strongly agree. In accordance with our policy statement, we emphasize that coordination of federal drought programs should ensure effective service delivery in support of nonfederal drought programs.

### **Specific Recommendations**

- 5.1 **Create Council.** The President should immediately establish an interim National Drought Council through an executive order and in combination with a Memorandum of Understanding that provides adequate staffing and funding. Congress should create a long-term, continuing National Drought Council. Both should be composed of federal and regionally diverse nonfederal members (see table on next page). The goal is to implement the recommendations of this report as soon as practicable.
- 5.2 **Co-chairs.** The President should appoint the Secretary of Agriculture as co-chair of the interim National Drought Council, with a nonfederal co-chair elected by the nonfederal interim Council members. Congress should designate the Secretary of Agriculture as the permanent federal co-chair of the long-term Council, with a nonfederal co-chair elected by the nonfederal Council members.
- 5.3 **Funding.** The President should request and Congress should provide administrative funding to support the interim and long-term National Drought Councils.





**5.4 Duties and process.** The interim and long-term National Drought Councils will be responsible for the tasks in the box on the next page.

**5.5 Authorization and appropriations.** We recommend that Congress provide federal departments and agencies with appropriate authority and funding needed to carry out the recommendations in this report. As noted at the beginning of this report, consideration should be given to the costs and benefits associated with drought preparedness, mitigation, and response measures.

---

*The six-county, multi-municipal Metropolitan Water District of Southern California incorporates drought planning and preparedness in its comprehensive Integrated Resources Plan and Water Surplus and Demand Management Plan. This regional coordination of local agencies is succeeding. The region is using less water today than in 1975, even though the population increased by 5 million people from 1975 to 1999.*

---

**Table. Council membership and designation process**

Federal entity	Council member designated by:	Nonfederal representation	Council member designated by:
Department of Agriculture	Department Secretary	East/West Governors	National Governors' Association
Department of the Interior	Department Secretary	County official	National Association of Counties
Department of Commerce	Department Secretary	City official	U.S. Conference of Mayors
Department of Energy	Department Secretary	Emergency management official	National Emergency Management Association
Department of the Army	Department Secretary	Business	U.S. Chamber of Commerce
Environmental Protection Agency	Agency head	Urban water* Rural water* Tribal* Environmental* Farm credit* Agricultural producers*	*Designated by the Secretary of Agriculture based on nominations from relevant broad-based groups
Small Business Administration	Agency head		
Federal Emergency Management Agency	Agency head		

---

## Responsibilities of the National Drought Council

The Council would be responsible for coordinating the following:

- Timely and efficient delivery of existing federal drought programs.
- Cooperation and participation among federal, state, local, and tribal interests and private water systems in federal drought assistance opportunities by example and through facilitation.
- Program assessments of drought-related assistance efforts.
- Determination of which regions have the most pressing need and greatest opportunities to coordinate and implement drought preparedness assistance programs, recognizing the special drought preparedness needs of tribes, small rural water districts, and small self-supplied water users.
- Development of an array of coordination strategies to provide support for state, local, and tribal drought planning and mitigation measures.
- Support of state, local, and tribal initiatives to coordinate with current regional drought planning entities, perhaps within watersheds or river basins, or to establish new regional entities.
- An assessment of major river basin initiatives and state programs to determine which methods have proven most effective in reducing conflicts over water.
- Development of a handbook of emergency drought preparedness measures.
- A survey of user groups to ascertain drought monitoring, prediction, and research needs and expectations.
- Establishment of drought impact assessment teams of federal, state, and other experts who are responsible, after drought events occur, for analyzing the causes and aggravating factors that contribute to drought and its social, economic, and environmental impacts.
- Development of a handbook on water supply techniques, including traditional and non-traditional strategies.
- Advocacy of drought-related educational training programs within universities, agencies, and public sector programs.

The Council co-chairs should report to the President and Congress annually on the progress of these activities.

---

The following information is available from the National Drought Policy Commission. You can access the following appendix files as well as the Commission's final report and executive summary at the Commission's web site: [www.fsa.usda.gov/drought](http://www.fsa.usda.gov/drought). The appendix files, final report, and executive summary can also be ordered in electronic format and hard copy. Write: National Drought Policy Commission, USDA/FSA/AO, 1400 Independence Avenue SW, Mail Stop 0501, Washington, D.C. 20250-0501.

- FILE A: Summary of Public Testimony at the Commission's Hearings and Public Comments Submitted Independently (by subject matter, entity, and place of business or residence)
- FILE B: List of the Commission's Five Working Groups and Members and Unedited Background Materials
- FILE C: Summary of State Drought-related Programs
- FILE D: Summary of Regional Drought-related Programs
- FILE E: Summary of Local Government Drought-related Programs
- FILE F: Summary of Tribal Drought Plans
- FILE G: Summary of Federal Drought-related Programs
- FILE H: Summary of Federal Drought-related Laws

## National Drought Policy Commission Staff

**Leona Dittus**  
Executive Director  
FSA (USDA)

**Larry Adams**  
ARS (USDA)

**Antona Bailey**  
FSA (USDA)

**Shirley Bridges**  
FS (USDA)

**George Cross**  
NRCS (USDA)

**Anne Henderson**  
NRCS (USDA)

**Maxine Levin**  
NRCS (USDA)

**Patricia Lowe**  
NRCS (USDA)

**Jim Maetzold**  
NRCS (USDA)

**Lavonne Maas**  
FSA (USDA)

**Tom Phillips**  
BOR (USDOI)

**Pat Porter**  
DA (USDA)

**Twanda Smith**  
FS (USDA)

**Janice Watkins**  
FSA (USDA)

**Consultants:**  
**Deanne Kloepper**  
Writer/editor

**Fred Sibley**  
Project Analyst

## Members of the Interagency Contacts Group

**Warren Lee, Co-chair**  
NRCS (USDA)

**Lorine Boardwine**  
Federal Emergency Management Agency

**Deborah Braver**  
Water Management Consultant

**Curtis Carleton**  
Federal Emergency Management Agency

**Peter Carlson**  
Will & Carlson, Inc./Urban Water

**Sarah Carlson**  
Midwestern Governors' Conference

**Michael B. Cook**  
U.S. Environmental Protection Agency

**Bill Ewing**  
New Mexico Department of Public Safety

**John Flowers**  
U.S. Environmental Protection Agency

**Abigail Friedman**  
National Association of Counties

**Gary Hudiburgh**  
U.S. Environmental Protection Agency

**Murray Johnston**  
Southern Governors' Association

**Doralyn Kirkland**  
Georgia Environmental Protection Division

**Jim Laver**  
National Oceanic & Atmospheric Administration

**Doug LeComte**  
National Oceanic & Atmospheric Administration

**Ants Leetmaa**  
National Oceanic & Atmospheric Administration

**Diana Marquez**  
Farm Credit Bank of Texas

**Chris Kadas, Co-chair**  
National Governors' Association

**Jeri Marxman**  
National Association of Counties

**Kevin McCarty**  
U.S. Conference of Mayors

**Robert McCormick**  
National Association of Counties

**Kimberly Miller**  
Office of Management and Budget

**Ray Motha**  
World Agricultural Outlook Board (USDA)

**Beth Osborne**  
Southern Governors' Association

**Jane Pease**  
Small Business Administration

**Al Peterlin**  
World Agricultural Outlook Board (USDA)

**Ross Racine**  
Intertribal Agriculture Council

**Harold Reheis**  
Georgia Environmental Protection Division

**Roseann Gonzales Schreiner**  
Bureau of Reclamation (USDOI)

**Bruce Smith**  
Office of the Assistant Secretary of the Army

**Ralph Tabor**  
National Association of Counties

**Bill Werick**  
U.S. Army Corps of Engineers

This publication was coordinated by the U.S. Department of Agriculture's Office of Communications (Design and Printing Center) and the National Drought Policy Commission staff.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

# Drought Snapshots from 20th Century America

1930s  
The decade-long drought affected more than 60% of the nation. It turned millions of acres into the Dust Bowl across the Great Plains, caused a huge migration from the southern Plains to California, and revolutionized agriculture policy on the Plains.

1950  
to  
1956  
Drought across the Southwest and southern Plains claimed millions of cattle and forced hundreds of ranchers to ship their livestock to other regions of the country, then moved northward to affect much of the central United States.

1967  
to  
1966  
Many parts of the Northeast experienced a drought of record. President Lyndon Johnson called an emergency meeting to mediate controversies between New York and Pennsylvania over water allocation along the Delaware River.



1976  
to  
1977  
Lack of winter snowfall resulted in extreme drought conditions in the Pacific Northwest and California. This drought was short lived. Nevertheless it placed great stress on water supplies.

Mid 1980s  
to  
mid 1990s  
Prolonged drought lasting up to seven years hit California and the Pacific Northwest. The Midwest and parts of the Southeast experienced drought emergencies in 1988.

1990s  
Hawaii faced several years of drought, and the southeastern and mid-Atlantic states felt the impacts of one of the worst droughts in 100 years, which extended through parts of the Northeast.